Amendments to the Drawings

Applicants have amended FIG. 2 to replace handwritten text with typed text. Two sheets of Replacement drawings corresponding to FIGS. 1 and 2 are enclosed.

REMARKS

Summary of Office Action

Claims 11-20 are pending.

Claims 11-16 and 20 have been rejected under 35 U.S.C. 103(a) as being obvious over applicant's admitted prior art ("AAPA") in view of the publication Smith et al. "Parallel Algorithms for Data compression" ("Smith"). Claim 14 also has been similarly rejected in further view of Bealkowski et al. U.S. patent No. 5, 636, 352.

Additionally, claims 17-19 have been rejected under 35 U.S.C. § 112 as being indefinite. Claims 17-19 also have been rejected under 35 U.S.C. § 112 as failing to comply with the enablement requirement.

The Examiner has noted informalities in claims 13, and the drawings.

Applicant's Reply

Applicant appreciates the Examiner's steadfast diligence and guidance in refine wording of the claims to insure clarity.

FIG. 2 has been amended to remove the informalities that were kindly noted by the Examiner. The § 112 rejections, and the prior art rejections are respectfully traversed. Applicant has e amended the claims for clarity. In particular, the claims have been amended to introduce element numbers for easier correspondence of the claimed elements with the figures.

§ 112 rejection of claims 17-19

Applicant has amended claims 17-19 for clarity and to overcome the deficiencies noted by the Examiner (See e.g., Office Action ¶¶ 6-10). In particular, claim 17 has been amended to recite that "the program word (7) comprises a number of

instruction word parts (6) ~~to be differentiated, that instruction word part~~ that occur ~~occurs most~~ frequently in the configuration step."

Applicant respectfully submits that amended claims 17-19 are definite, fully enabled, and conform to all requirements of § 112.

§ 103(a) rejections

The Examiner has noted that applicant's previously submitted arguments were directed to limitations not explicitly recited in claim 11. (See Office Action ¶ 30 and ¶ 35). Applicant has therefore amended claim 11 to explicitly include such limitations. Claims 11 now recites "wherein the configuration step consists forming and storing previously generated complete Very Long Instruction Words as the first reference group of preceding primary instruction words and the subsequent execution step comprises dynamic updating of the stored reference group of complete Very Long Instruction Words."

Applicants respectfully request reconsideration of the previously submitted arguments, which for completeness are reproduced here.

As previously submitted, applicant's invention relates to generating an instruction word with instruction word parts. These instruction words are also called VLIW (Very Long Instruction Word) and used in parallel calculating processors especially in SIMD processors (Single Instruction Multiple Data). (See e.g., AAPA Weiss et al.).

As recited in claim 11, applicant's invention calls for a configuration (compiler) step/phase in which a first (reference) group of preceding primary instructions is formed. The group of instructions is used as a reference group to avoid repetition of

instruction word parts. The group is dynamically or continually updated in the execution steps/phase by the dynamic storage of the second group of secondary instruction words. At least these elements of claim 11 are not shown, taught or suggested by the any of the cited references – AAPA and Smith.

Applicant has previously noted that Smith, for example, only describes a method for compressing data for transmitting data in a large amount over a communication channel. Smith uses a static dictionary in which several terms are provided with location numbers. (See e.g., Section 2). Using this dictionary, Smith compresses data for transmission by removing parts that are identical with the terms in the dictionary and substituting these parts with a pointers corresponding to the location numbers of the respective terms. Thus, the compressed data is a mixture of pointers and data (numbers and letters), which by its very form cannot be represented as content of the dictionary. Smith's dictionary includes pre-selected terms but does not include preceding primary instructions. Further, unlike applicant's invention Smith's dictionary is not dynamically updated in the execution phase of a program. Additionally, Smith's dictionary is pre-set in the configuration phase and must be transmitted together with the sequence of compressed data.

AAPA (e.g., Weiss et al) describes storing only one secondary instruction word. AAPA fails to describe, teach or suggest using a reference group of instructions or instruction parts, and AAPA particularly fails to describe, teach or suggest using a reference group of instructions or instruction parts, which dynamically updated.

Applicant has previously noted that neither Smith nor AAPA describe, teach or suggest selection of a previous instruction word from the reference group using a

criteria of the greatest similarity. As claimed in claim 11 such a selection is incorporated already within the configuration phase. In the execution phase, the second group is generated and the instruction word (generated previously) with the greatest similarity to the instruction word to be executed is selected by the first characteristics. Because the first characteristics indicate the instruction word with the greatest similarity, this instruction word can be selected from the second group by correlation of the first characteristics with the second characteristics of the member of the second group with the greatest similarity. Thus, applicant's invention ensures that only the minimum of different information is to be transferred by the sequence of program words, and also only a minimum of instruction word parts have to be exchanged for generating a new instruction word in the execution phase.

Applicant has previously noted that Smith describes a conventional sliding dictionary involving dynamic storage in another context. (See e.g. Section 5). However, Smith's sliding dictionary is unlike applicant's dynamic reference groups of "complete" prior instructions compiled during configuration or updated during program execution (primary or secondary instructions). In Smith's sliding dictionary, the target of a pointer is always a substring of a portion of the data string already decoded. In other words, the sliding dictionary comprises only parts of the same data string (e.g. a word). In contrast, applicant's claim 11 requires the storage of previously generated "complete" VLIW or instruction words (e.g., in the second reference group)

Thus, claim 11 patentable over the cited references — AAPA, and Smith, whether the references are view individually or in combination.

Further, with reference to claim 14, as previously submitted, Bealkowski relates execution of condensed instructions in a CISC or a RISC processor, which do not involve VLIW instructions (that are characterized as having multiple instruction word parts). In particular, Bealkowski does not describe any method for compressing instruction words with multiple parts into program words in a compilation phase, or any method for decompressing the compressed program words in an execution phase.

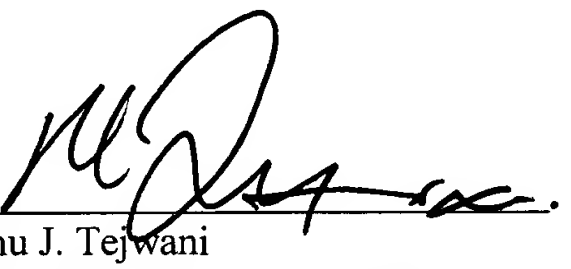
Thus, claim 14 is patentable over the cited references – AAPA, Smith and Bealkowski, whether the references are view individually or in combination.

Further, claims 12-20 that depend from claim 11 are patentable for at least the same reason as parent claim 11.

Conclusion

Applicant respectfully submits that this application is now in condition for allowance. Reconsideration and prompt allowance of which are requested.

If there are any remaining issues to be resolved, applicant respectfully requests that the Examiner should kindly contact the undersigned attorney for a telephone interview.

By: 

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